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CONCERNING SOME MEXICAN VELIIDAE (HEMIPTERA)

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While collecting aquatic Hemiptera in Mexico during the past summer (1951), the authors netted 6 specimens of a robust water-strider of the genus *Velia* Latreille, which was much more active and behaved differently after capture in the net than its congeners. An examination of the specimens showed that the last two segments of the male venter were singularly developed and greatly modified as described in *Velia annulipes* Champion. Further studies also revealed that the male parameres were not the same as the left paramere of the male type figured by Hungerford in 1929.

On account of the differently shaped parameres and other characters, it seemed advisable to have the Mexican species checked with the types of *V. annulipes* Champion in European museums. The writers are greatly indebted to Dr. R. J. Izzard for notes and an outline drawing of the paramere of the male type from Guatemala in the British Museum. Dr. Max Beier of the Naturhistorisches Museum at Vienna has kindly loaned us the male cotype from Mexico (*ex. collection of Signoret*) as listed beneath the original description. Dr. H. B. Hungerford of the University of Kansas has also kindly given us some data relative to the types of *V. annulipes*, which he secured several years ago while studying the types of American aquatic Hemiptera deposited in European Museums. The results of our findings are discussed below under the species concerned, beginning with the description of the Mexican veliid as new to science.

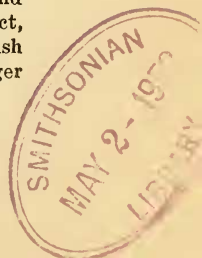
Velia alvaradana, sp. new

(Fig. a)

Apterous male: Large, robust, subfusiform, dark ferrugineous-fuscous with several small groups of glistening silvery hairs. Antennae dark brown with second segment very widely banded with pale testaceous beyond the base (basal dark part much shorter than band; apical part beyond the band darker and approximately equal to the band in size). Pubescence short, very dense, brown. Body beneath dark fuscous-brown with posterior part of venter and genital segments brown. Wing pads tiny, snowy white. Macropterous forms unknown.

Size: Length, 5.60 mm.; width, 1.65 mm.

Head: Width across eyes, 1.10 mm.; interocular space, 0.38 mm. Head densely pubescent with scattered long dark hairs, the hairs denser and lighter along inner margins of eyes. Impressed median line distinct, black, convex between the eyes. Rostrum testaceous, becoming blackish apically. Antennae long, slender, shortly pilose with scattered longer



hairs on distal two segments; segment I moderately swollen, slightly bowed; II much slenderer, thicker than next two; III and IV quite slender, equal in thickness; formula—I, 136; II, 74; III, 80; IV, 68.

Thorax: Pronotum blackish with a large central brown area a little back of narrow collar, with a conspicuous small patch of glistening silvery hairs on each side of pale patch; without humeral elevations, with posterior margin slowly broadly rounded, the median length and width across humeral angles nearly equal (120:128). Rest of dorsal part of thorax almost entirely concealed by pronotum.

Legs: Long, moderately stout, pubescent, clothed beneath with longer pale hairs; femora of about equal thickness. Anterior legs—broadest near base, a very narrow band at apex and another subapical band pale testaceous, beneath beset with many short dark spicules, which are not arranged in definite rows; tibiae with a narrow preapical and a narrow subbasal bands testaceous, beneath with two dense rows of short black teeth (rows placed very closely together); tarsi dark brown, hairy; segment I very short and about half as long as second; III nearly three times as long as second. Middle legs with markings similar to fore legs but with the basal testaceous area of femora much smaller; femora beneath with two rather sparse rows of short blunt black teeth (one row sometimes incomplete); tibiae beyond the middle beneath with a sparse row of seven or eight long dark hairs; tarsi beneath with hairs a little longer than the diameter of segments, formula of segments—I, 8; II, 35; III, 42. Hind legs with color markings similar to intermediate legs; coxae and trochanters denticulate beneath; femora beneath with two rows of larger and stouter black teeth; tibiae denticulate beneath, the black teeth tending to be arranged in two irregular rows, formula of segments—I, 8; II, 35; III, 42. Tarsi of all legs with basal part of third and second segments largely testaceous.

Abdomen: Dorsal surface dark ferruginous with several patches of silvery hairs on last four segments; connexiva with silvery hairs on outer part of joints between segments; venter with hind margin of penultimate segment broadly produced posteriorly with the median part narrowed and terminating in a large tubercle like process, which extends posteriorly as far as the hind margin of the ultimate segment. First genital segment beneath very strongly abruptly depressed from near the base to apex so as to leave the apical part of segment much thinner than the basal. Left paramere very broad and modified as in figure 1. Right paramere of similar size and shape.

Apterous female: Broader and much stouter than male, but with color and markings quite similar. Antennal formula same as in male, second segment also broadly banded with testaceous. Last segment of venter not quite twice as long as preceding segment, becoming a little narrower posteriorly. Other characters as in male.

Type (male), *allotype* (female) and 3 *paratypes*, Puebla, Mex., July 20, 1951, taken under thinly overhanging vegetation near the water's edge in a small river. Paratype, one specimen, Alvarado, Mex., collected near the shore among aquatic vegetation in a small stream.

This striking species may be separated at once from *V. annulipes* by the banded second antennal segment and shape of the parameres (fig. a). It was taken in company with *V. pueblana* Drake and *V. brachialis* Stål. When netted, *V. alvaradana* is extremely active and runs about swiftly

trying to escape. It is much more agile and faster than *V. brachialis* Stål. Another species, *V. pueblana*, lives in the same type of habitat and is almost as active in the net as *V. alvaradana*.

Velia verana, sp. new

(Fig. b)

Velia annulipes Champion, Biol. Centr.-Amer., Rhynch., 2:142. 1898 (in part).

The name *V. verana* is here proposed for the second specimen (male, cotype) of *V. annulipes* Champion, bearing the labels "Mex., collection of Signoret," "cotype," "*V. annulipes* Champ." as determined by Champion in the Mus. Vind. Caes. As may be noted in the figure, the left male paramere (b) is very different from the male type of *V. annulipes* (c), and more closely related to *V. alvaradana* (a).

V. verana differs from *V. alvaradana* in its smaller size (5.00 mm. long), uniformly colored second segment of antennae (with a very broad testaceous band in *V. alvaradana*) and shorter antennae. Antennal formula—I, 61; II, 36; III and IV wanting. Winged form and female, unknown. We are indebted to Dr. Max Beier for loaning us this unique specimen in the Naturhistorisches Museum at Vienna. The parameres of this species and *V. alvaradana* were drawn by Mrs. Richard Froeschner.

Velia annulipes Champion

(Fig. c)

Velia annulipes Champion, Biol. Centr.-Amer., Rhynch., 2:149, pl. 9, figs. 8 & 8a. 1898.

Velia annulipes Hungerford, Ann. Ent. Soc. Amer., 32:720, fig. 1. 1929.

The type of this striking species is a male from Guatemala in the British Museum, Champion (1898) illustrated a dorsal view of the type, and Hungerford (1929) figured its left paramere. Dr. R. J. Izzard of the Brit. Mus. has kindly made an outline drawing of the type. The hairs are not shown.

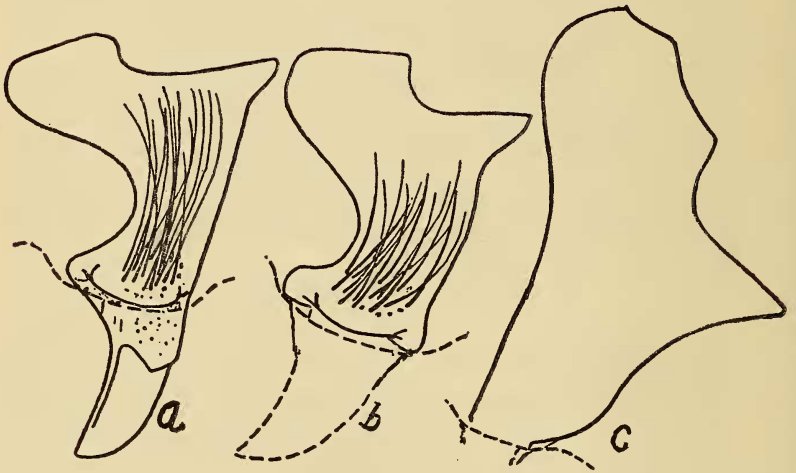


PLATE V

Left Parameres of *Vella*

a. *V. alvaradana* n. sp.

b. *V. verana* n. sp.

c. *V. annulipes* Champion